FOREST INSECT AND DISEASE CONTROL
STATE AND PRIVATE FORESTRY

Region 4 Forest Service
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April 1975

BIOLOGICAL EVALUATION
A Tent Caterpillar Infestation
Capital Reef National Park
1974

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INTRODUCTION

During the spring of 1974, Capital Reef National Park personnel reported tent building and defoliation of Fremont poplar by a tent caterpillar in the Park along the Fremont River. On May 16, 1974, Forest Service Entomologist Douglas Parker and Chief Ranger James Taylor examined the infestation. Mr. Parker's observation was that defoliation increased over that reported in 1973, but damage was confined to scattered tree groups beginning near the visitors center and extending east for about three miles along the highway and Fremont River.1/ Mr. Parker also observed that the insect had started pupation and recommended that an egg mass survey be conducted in the fall as an indication of the 1975 population level.

TECHNICAL INFORMATION

INSECT: A tent caterpillar, Malacosoma incurvum discoloratum (Neumogen).

HOST TREE: Fremont poplar, Populus fremontii S. Watson.

LOCATION: Capital Reef National Park, Torrey, Utah.

EXTENT OF OUTBREAK: Defoliation of trees along the Fremont River, extending east from the visitors center for approximately three miles.

1/ Parker, D.L., 1974 Biological Evaluation, A Tent Caterpillar onFremont Poplar, Capital Reef National Park, Intermountain Region, U.S. Forest Service. Processed. 2 p.

METHODS

On July 17, 1974, Forest Service Entomologist Lawrence Stipe examined the infestation and laid the groundwork for a followup biological evaluation survey. On July 27 and 28, Forest Service Technicians Nick Crookston and Mark Ebertz conducted a systematic egg mass survey.

Sampling procedures entailed cutting two 30" branches from the midcrowns of 20 trees from four areas (see map). Each branch was individually examined for new and old egg masses and their numbers recorded.

RESULTS

The results of the egg mass survey follows:

Plot No. Area	Number Examined		Number of Egg Masses				Trend
			New		Old		
	Trees	Branches	Total	Per Branch	Total	Per Branch	
1 Orchard	20	40	0	0	0	0	-
2 Picnic	20	40	0	0	0	0	-
3 Residence	20	40	0	0	0	0	-
4 River	20	40	13	0.33	15	0.38	Static

DISCUSSION AND CONCLUSIONS

On July 17, during Mr. Stipe's examination, all of the affected trees had refoliated. Experience has shown that Fremont poplar has an innate ability to recover from defoliation. During past outbreaks, particularly the serious one in Zion National Park during the mid-sixties, the most serious damage was branch kill. The tent caterpillar and its host, Fremont poplar, appear to be well synchronized to the mutual advantage of each. Larva hatch early in the year and consume the newly developing foliage when moisture is readily available and the trees are not usually under stress. The larval feeding period is short and pupation begins in early May (sometimes by mid-April) before the trees have to compete for available moisture, thereby affording them an opportunity to refoliate before summer.

When the tent caterpillar populations are exceptionally heavy, they create unsightly damage and can be a serious nuisance, particularly in developed campgrounds. In heavy infestations larvae are ubiquitous and during periods of active feeding, their excrement (frass pellets) literally "rain" from the trees.

The population is very light with the heaviest damage expected along the Fremont River east of the visitors center. Tents will be widely scattered, but concentrated on a few individual trees. Most will be visible from the highway.

RECOMMENDATIONS

Although there will be some visible activity during 1975, it will not be heavy enough to warrant control. If control was needed, it would be unfortunate, for there is no approved and registered insecticide for this insect. However, in the event subsequent evaluations indicate increasing populations, there is a good possibility that the area might be used to pilot test one or more promising non-chemical insecticide such as Bacillus thuringiensis. A commercial preparation of BT produced good control of the tent caterpillar in parts of Zion National Park in 1965.

We will plan to reevaluate the infestation this spring and summer to check our present recommendations, and to determine the population potential for 1976.

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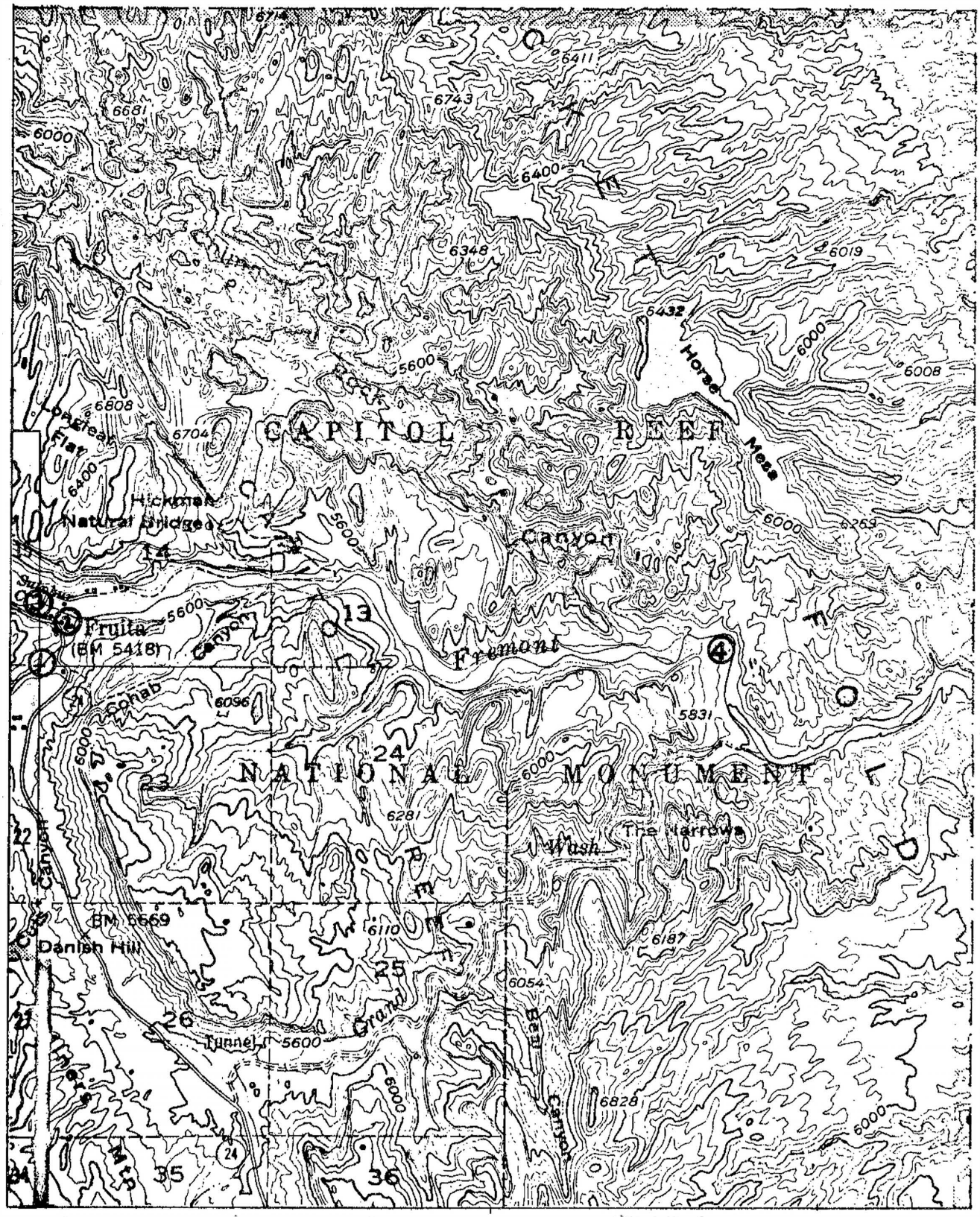

FIGURE 1

LOCATION OF EVALUATION AREAS
Capital Reef National Park